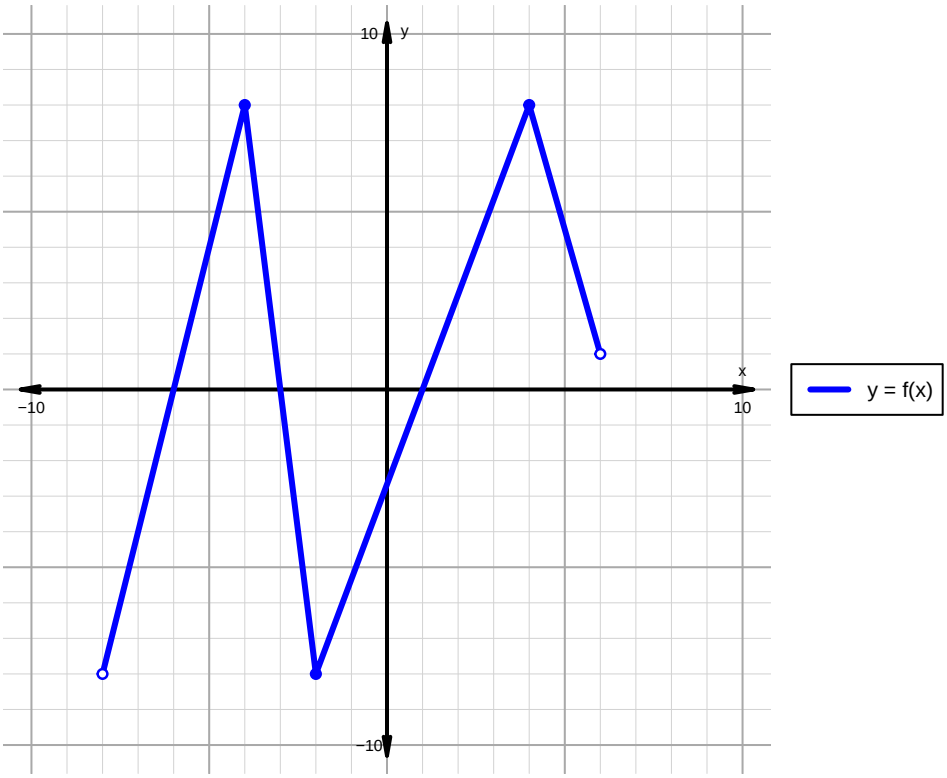
Name: Date:

Intervals, Transformations, and Slope Solution (version 80)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-6,-3)\cup(1,6)$
Negative	$(-8,-6)\cup(-3,1)$
Increasing	$(-8,-4)\cup(-2,4)$
Decreasing	$(-4,-2)\cup(4,6)$
Domain	$(-8,6)$
Range	$(-8,8)$

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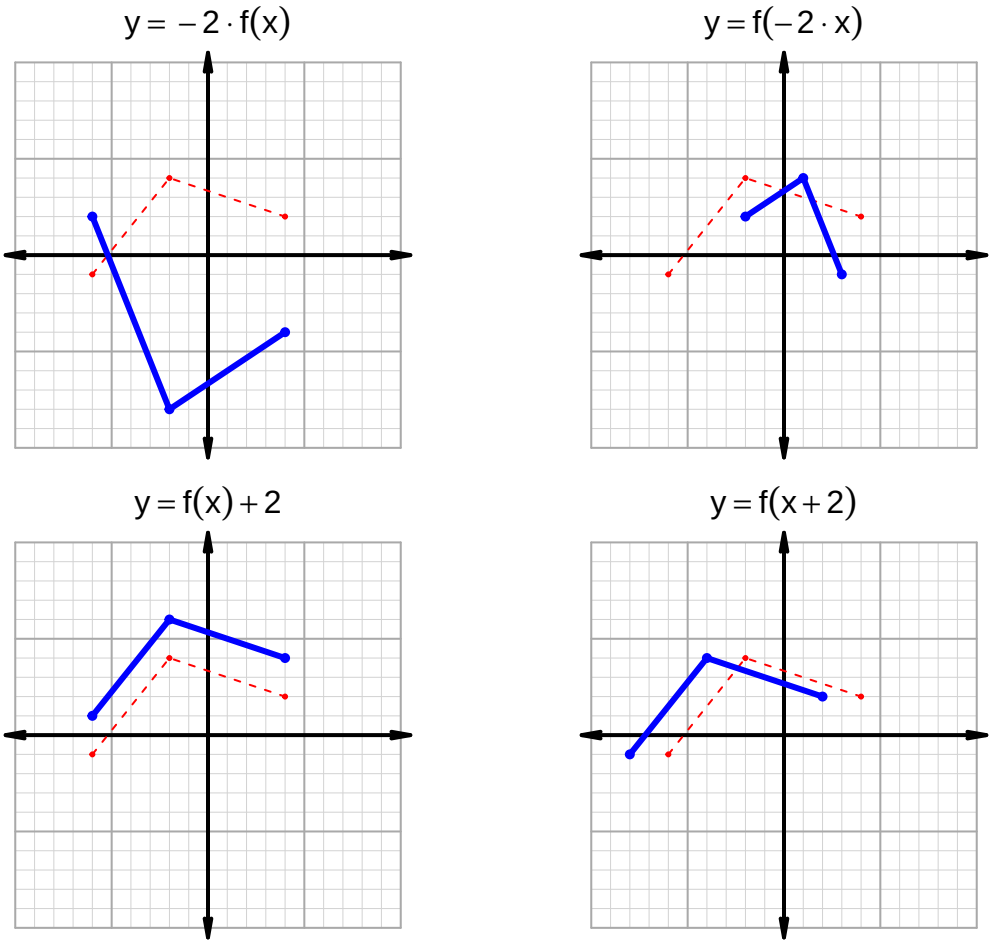
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 40$ and $x_2 = 80$. Express your answer as a reduced fraction.

x	$g(x)$
20	80
40	20
76	40
80	76

$\frac{g(80)-g(40)}{80-40} = \frac{76-20}{80-40} = \frac{56}{40}$

The greatest common factor of 56 and 40 is 8. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{7}{5}$$